

# Transport infrastructure in the European Union and Central European Countries 1990-1999

*EU: more than 1000 km of new motorways per year  
CEC: less than 100 km of new motorways per year*

*Hans Strelow*

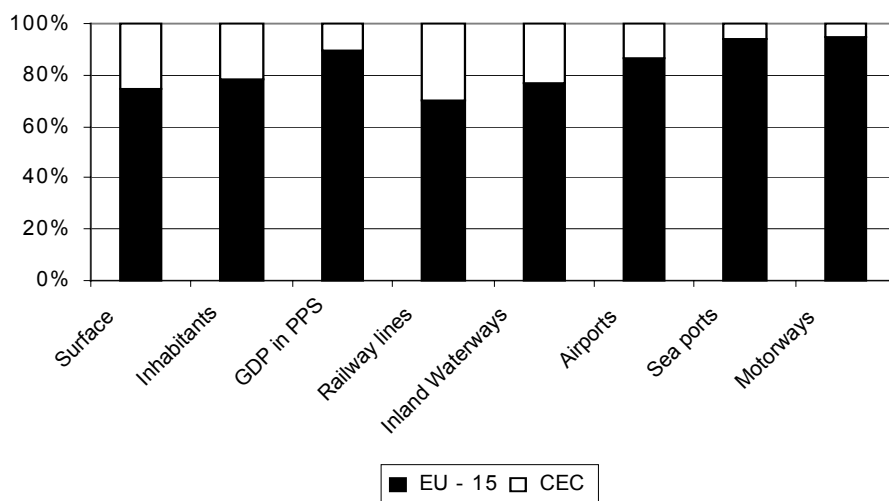


Figure 1: Comparison of transport infrastructures in EU and CEC areas in 1999

From 1990 to 1999 the total length (EU plus CEC) of motorways increased by 26%, but only around 5% of the total corresponds to the CEC.

The relative share of transport infrastructure is higher in the CEC when it comes to the rail network. The share is around 30% of the combined total for EU plus CEC.

The total length of the inland waterway network for the CEC is less than 25% of that for the EU.

For maritime freight transport, the top 10 ports in the EU handle more than 5 times the total of the top 10 ports in the CEC. The tenth port in the EU list handles 24% more goods than the busiest one in the CEC.

The CEC have a share of 13% of the total EU and CEC airports. The total international traffic (passengers arriving and departing) for the top 10 CEC airports is just 26% greater than for the airport at Madrid Barajas (Spain) which is the tenth busiest in the EU.

## Statistics in focus

### TRANSPORT

THEME 7 – 4/2002

## Contents

TRANSPORT INFRASTRUCTURE 1990-1999. 2

MOTORWAY NETWORK DENSITY ..... 3

RAIL NETWORK DENSITY ..... 4

RAIL NETWORK UTILISATION. 5

AIR AND MARITIME TRANSPORT ..... 6



## TRANSPORT INFRASTRUCTURE 1990-1999

In the EU, three countries have the largest railway network, namely Germany (38 126 km), France (31 727 km) and the United Kingdom (16 847 km). This was already the case in 1990. Concerning the motorway network, again Germany (11 427 km) and France (9 303 km) are in first and second position, followed by Spain (8 257 km) and Italy (6 453).

As far as inland waterways are concerned, Germany (7339 km), Finland (6245 km), France (6051 km) and the Netherlands (5046 km) have much larger networks than most of the other countries.

	Railway network		Motorway network		Inland waterways		Number of main commercial airports	Number of main sea ports
	Length (km)		Length (km)		Length (km)			
	1990	1999	1990	1999	1990	1999		
<b>EU - 15</b>	<b>160 005</b>	<b>153 640</b>	<b>39 242</b>	<b>49 233</b>	<b>29 637</b>	<b>29 818</b>	<b>141</b>	<b>320</b>
Belgium	3 479	3 410	1 631	1 682	1 513	1 540	3	4
Denmark	2 344	2 232	601	861	-	-	2	46
Germany	40 981	38 126	10 809	11 427	6 669	7 339	17	16
Greece	2 484	2 503	190	500	6	6	16	27
Spain	12 560	12 303	4 693	8 257	70	70	20	17
France	34 260	31 727	6 824	9 303	6 197	6 051	16	26
Ireland	1 944	1 909	26	94	-	-	3	4
Italy	16 086	16 041	6 193	6 453	1 366	1 466	17	41
Luxembourg	271	274	78	115	37	37	1	.
Netherlands	2 798	2 808	2 092	2 360	5 046	5 046	4	10
Austria	5 624	5 643	1 445	1 613	351	351	5	.
Portugal	3 592	2 794	316	1 252	124	124	3	25
Finland	5 867	5 867	225	467	6 237	6 245	4	20
Sweden	10 801	11 156	939	1 428	390	390	5	33
United Kingdom	16 914	16 847	3 181	3 421	1 631	1 153	25	51
<b>EFTA</b>								
Norway	4 044	4 021	355	589	-	-	5	22
Iceland	-	-	-	-	-	-	1	1
Liechtenstein	19	19	-	-	-	-	-	.
Switzerland	5 030	5 035	1 495	1 642	21	21	4	.
<b>Total CEC</b>	<b>69 384</b>	<b>65 400</b>	<b>2 149</b>	<b>2 850</b>	<b>11 237</b>	<b>8 960</b>	<b>21</b>	<b>19</b>
Bulgaria	4 299	4 290	273	324	470	470	3	4
Czech Republic	9 451	9 444	357	499	-	664	3	.
Estonia	1 026	968	41	87	520	320	1	3
Hungary	7 772	7 642	267	448	1 373	1 373	1	.
Latvia	2 397	2 413	-	-	347	-	1	3
Lithuania	2 007	1 905	421	417	369	369	1	1
Poland	26 228	22 891	257	268	3 997	3 813	6	5
Romania	11 348	10 981	113	113	1 782	1 779	3	2
Slovakia	3 660	3 665	192	295	2 379	172	1	.
Slovenia	1 196	1 201	228	399	-	-	1	1

Table 1: Transport infrastructure 1990 - 1999

In the CEC, more than 65% of the total length of railway network is found in the following three countries: Poland (22 891 km), Romania (10 981 km) and the Czech Republic (9 444 km).

As for the motorway network in the CEC, the Czech Republic (499 km) has the greatest length, followed by

Hungary (448 km), Lithuania (417 km) and Slovenia (399 km).

The length of inland waterways is greatest in Poland (3 813 km), Romania (1 779 km) and Hungary (1 373 km).

Most countries experienced a decline in the length of the railway network between 1990 and 1999. The average fall in the EU is 707 km and in the CEC is 443 km per year. However, the length of the motorway networks increased in all countries, except Lithuania. The average growth in the EU is 1 110 km and in the CEC is only 78 km per year.

The number of main commercial airports of the CEC is nearly 13% of the number in the EU, whereas the number of main ports is only more or less 6% of the number in the EU.

### MOTORWAY NETWORK DENSITY

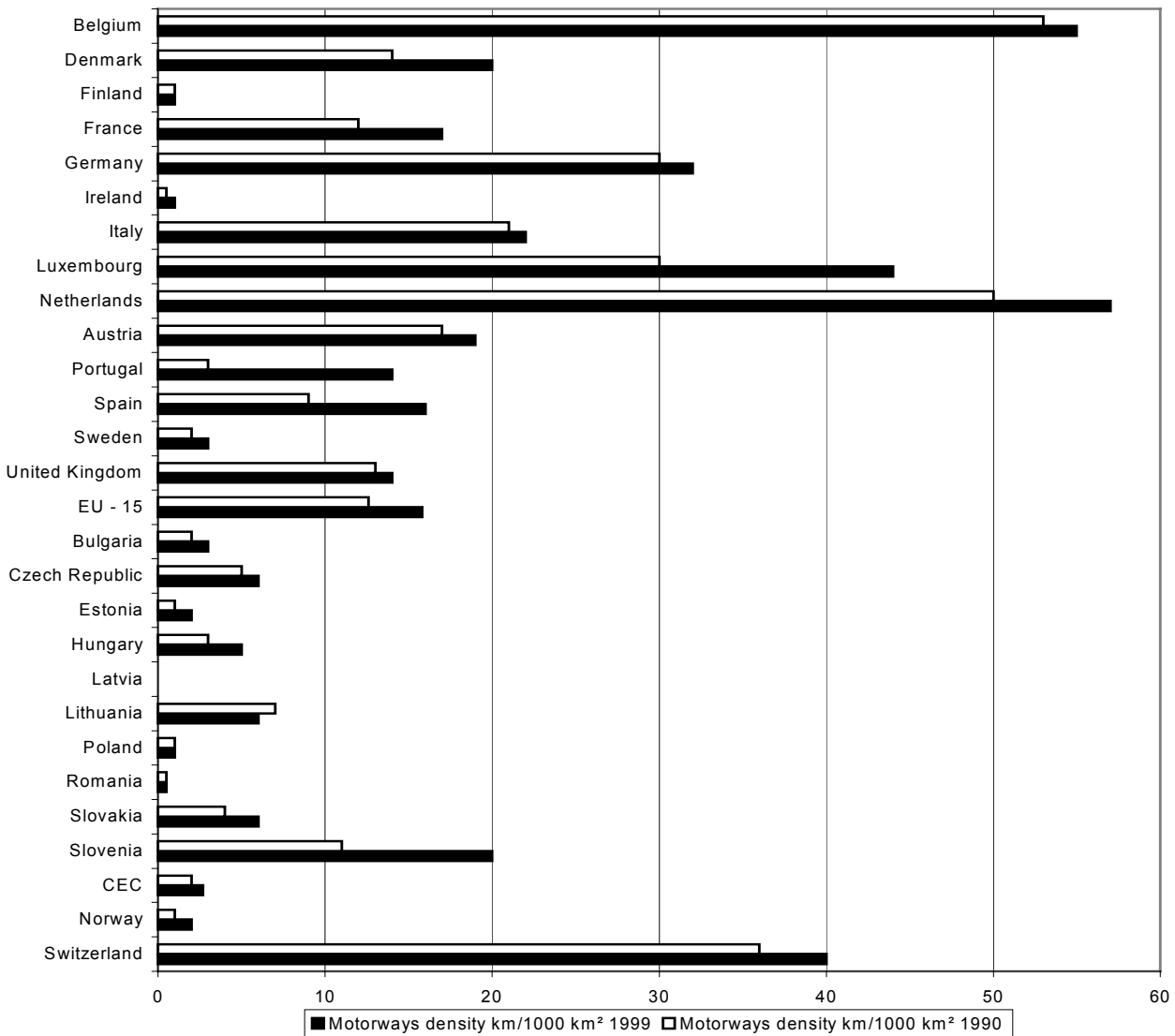


Figure 2: Motorway network density 1990 - 1999

The motorway network density for a country is obtained by dividing the length of motorways by the surface area. From Figure 2 it can be observed that the Benelux countries (the Netherlands, Belgium and Luxembourg) have the highest density, while Sweden, Finland, Norway and Ireland have the lowest. This reflects the fact that these countries have a relatively large surface area but a low population density.

The largest country, France, has the same density as the average EU density, while the smallest EU countries, Belgium and Luxembourg, have a high one.

Within the CEC, Slovenia has by far the highest motorway network density, higher than the EU average. Overall, the average network density within the CEC is more or less 20% of the average density of the EU.

### RAIL NETWORK DENSITY

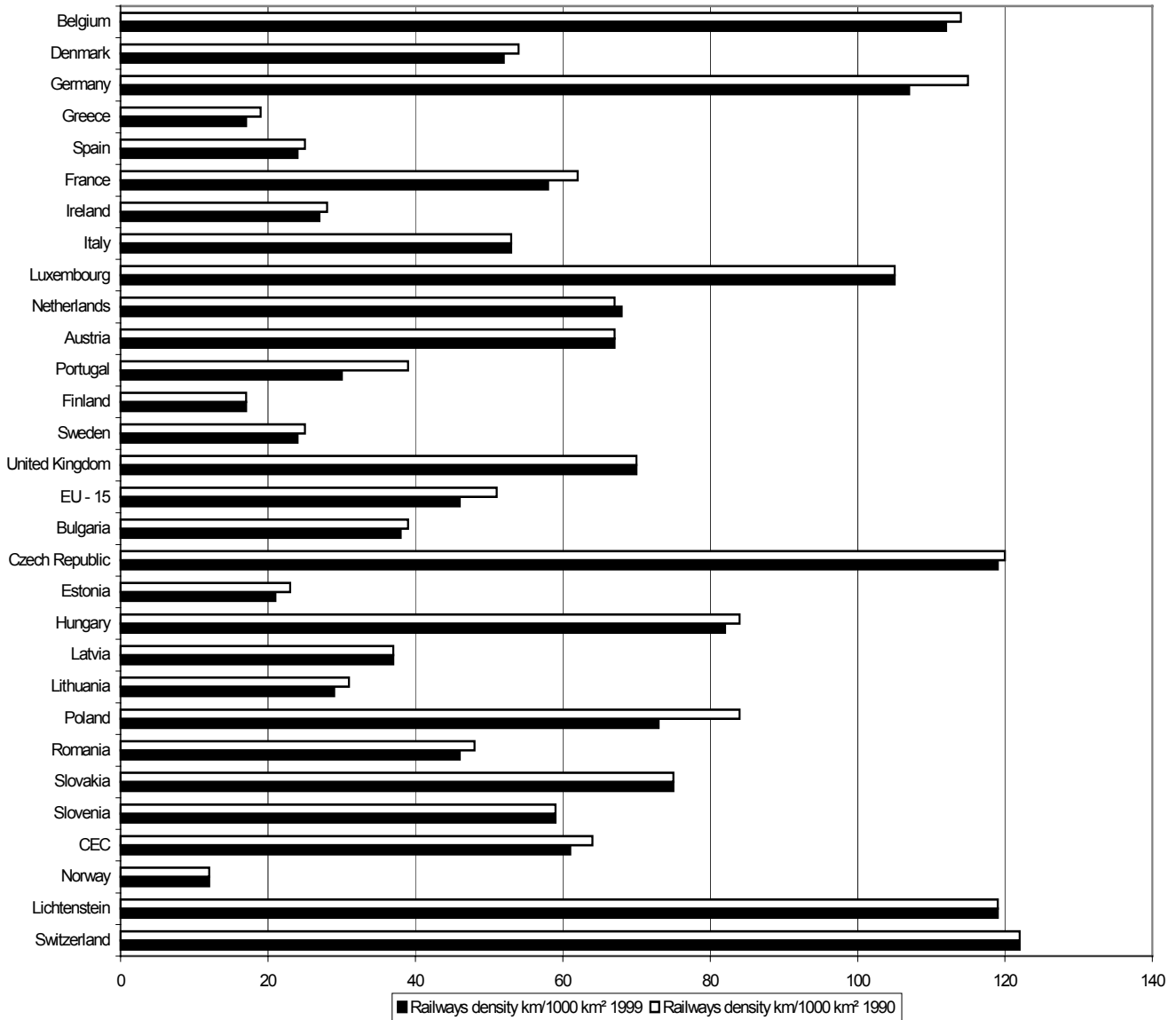


Figure 3: Rail network density 1990 - 1999

The EU countries with the highest rail network density are Belgium, Germany and Luxembourg, although the first two experienced a decrease between 1990 and 1999.

Within the CEC, the Czech Republic, Hungary and Slovakia have the highest network density. However, here too the network density declined for most countries.

The average density of the rail network in the CEC is even slightly above the average density of the EU countries.

## RAIL NETWORK UTILISATION

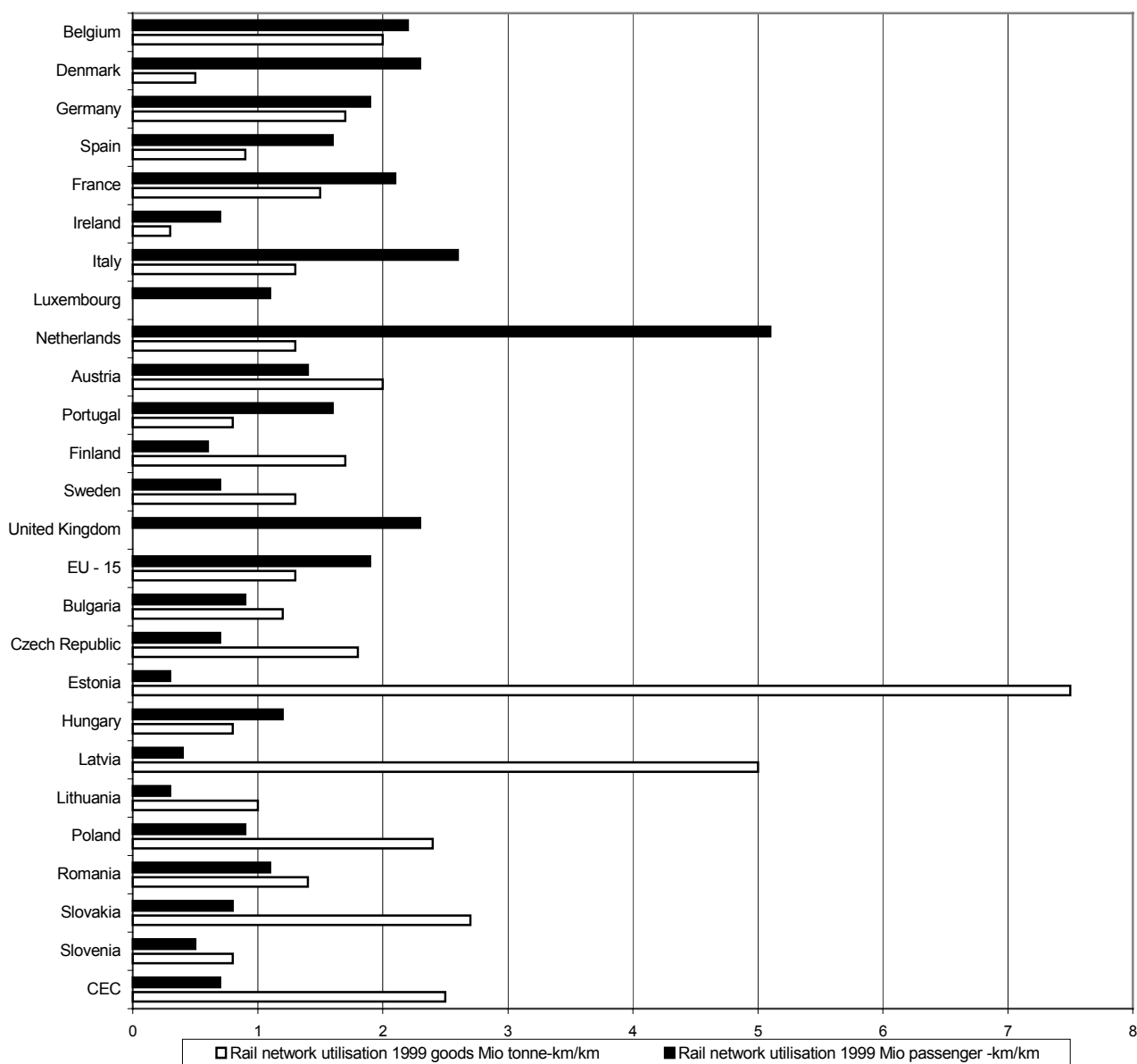


Figure 4: Rail network utilisation 1999 (Greece: data are missing, Luxembourg and United Kingdom: data for goods are not available)

The network utilisation rate is calculated by dividing the total volume of goods transported (expressed in Mio tonne-km) by the length of the railway network.

Among the CEC, Estonia and Latvia have by far the highest rail network utilisation for goods, followed by Slovakia and Poland. Each of these four countries have a higher utilisation than any country in the EU, where Belgium, Austria and Finland record the highest figures.

For passengers, the Netherlands and Italy have the highest network utilisation, followed by the UK and Denmark; overall, the average EU network utilisation is almost three times bigger than the average CEC network utilisation.

## AIR AND MARITIME TRANSPORT

### Maritime transport

For goods, the top 10 ports in the EU handle more than 5 times the amount of the top 10 CEC ports. Within the EU, Rotterdam (299.1 Mio t) handles much more than all the other ports. The second port is Antwerpen, with over 100 million tonnes of goods in 1999. Within the CEC, Ventspils (34.1 Mio t) and Constanta (32.5 Mio t) handle the largest amount of goods. However, all the CEC ports are ranked below the top 10 EU ports.

**Table 2: Top 10 seaports - on the basis of gross weight of goods handled (million tonnes), 1999**

EU	1999	CEC	1999
Rotterdam, NL	299.1	Ventspils, LT	34.1
Antwerpen, B	115.7	Constanta, RO	32.5
Marseille, F	90.3	Tallinn, EE	26.3
Hamburg, D	81.0	Gdansk, PL	18.7
Le Havre, F	63.9	Szceczin, PL	16.0
Amsterdam, NL	55.7	Klaipeda, LT	15.0
London, UK	52.4	Riga, LT	12.0
Tees & Hartlepool, UK	49.3	Burgas, BG	10.9
Genova, I	45.9	Gdunia, PL	7.3
Forth ports, UK	45.4	Koper, SI	4.0
<b>Total of top 10</b>	<b>898.7</b>	<b>Total of top 10</b>	<b>176.8</b>

### Air transport

For international passengers, the total of the top 10 airports in CEC is only about 6% of the total of the top 10 in the EU. London Heathrow, and Paris Charles de Gaulle, are first and second in the EU, with more than 40 million passengers each in 1999.

Prague, (4.81 Mio), Budapest, (4.32 Mio) and Warsaw, (4 Mio) have by far a larger traffic than the other CEC airports.

**Table 3: Top 10 airports - international passengers arriving and departing (million passengers), 1999**

EU	1999	CEC <sup>1</sup>	1999
London Heathrow, UK	54.8	Prague, CZ	4.81
Paris Charles de Gaulle, F	44.3	Budapest, HU	4.32
Frankfurt Rhein-Main, D	37.1	Warsaw, PL	4.00
Amsterdam Schiphol, NL	36.3	Bucharest, RO	1.68
London Gatwick, UK	27.6	Sofia, BG	1.24
Brussels Zaventem, B	19.9	Ljubljana, SI	0.89
Kopenhagen, DK	17.5	Riga, LT	0.56
Manchester/INTL, UK	14.7	Tallinn, EE	0.55
Palma de Mallorca, E	14.6	Vilnius, LT	0.48
Madrid Barajas, E	13.9	Bratislava, SK	0.28
<b>Total of top 10</b>	<b>280.7</b>	<b>Total of top 10</b>	<b>18.81</b>

<sup>1</sup> Data are for total traffic (international, national and transit). National traffic is very limited therefore CEC airports data can be compared with EU airports data

## ➤ ESSENTIAL INFORMATION – METHODOLOGICAL NOTES

The data presented here were supplied to Eurostat by the national statistical offices and other national authorities.

A complete set of detailed tables for CEC will be published by Eurostat in the next edition of the Statistical Yearbook on Candidate and South-East European countries.

The data are included in Eurostat's New Cronos database. The definitions used are taken from the Eurostat/UNECE/ ECMT Glossary for Transport Statistics, available at: <http://www1.oecd.org/cem/online/glossaries/>

**GDP** - Gross Domestic Product is the total value of all goods and services produced within a country in a year.

**PPS** - Purchasing Power Standard, is a unit representing an identical volume of goods and services in each country, irrespective of price levels. The value of 1 PPS unit corresponds roughly to 1 Euro.

**Railway** is line of communication, made up by rail exclusively for the use of railway vehicles.

**Motorway** is road specially designed for motor traffic, which (a) does not serve properties bordering on it (b) has separate carriageways (c) does not cross at level with other roads (d) is specially sign-posted as a motorway (e) reserved for specific categories of motor vehicles.

**Inland waterways:** river, canal, lake or other stretch of water which by natural or man-made features is suitable for navigation.

**Number of main commercial airports:** with > 100 000 passengers movements per year.

**Number of main seaports:** handling >1 million tonnes per year or with >200 000 passengers movements per year.

**Network density** is determined by dividing the length of the network by the surface area of the country. It is expressed in km per 1000 km<sup>2</sup>.

The surface of Norway does not include Svalbard and Jan Mayen.

The railway in Liechtenstein is owned and operated by ÖBB (Austrian railways) and included in the Austrian railway statistics.

**Network utilisation** rate is determined by dividing the total volume of goods transported (expressed in tonnes) by the length of the railway network. The figure for the total volume of goods is based on national and international transport (where international transport refers to goods loaded and unloaded in the reporting country).

### The following notations were used:

- : Figure not available
- Nil
- . Not applicable

### Abbreviation:

<b>km</b>	Kilometer
<b>CEC</b>	Central European Countries (candidate countries)
<b>EU</b>	European Union Member States
<b>EFTA</b>	European Free Trade Association

This publication was prepared by Diana Nikland (State Statistical office of Estonia) and Mojca Zlobec (Statistical Office of the Republic of Slovenia), on secondment to Eurostat within the PHARE programme.

# Further information:

## ➤ Databases

New Cronos, Domain Theme 7

To obtain information or to order publications, databases and special sets of data, please contact the **Data Shop** network:

BELGIQUE/BELGIË	DANMARK	DEUTSCHLAND	ESPAÑA	FRANCE	ITALIA – Roma
<b>Eurostat Data Shop</b> <b>Bruxelles/Brussel</b> <b>Planistat Belgique</b> Rue du Commerce 124 Handelsstraat 124 B-1000 BRUXELLES / BRUSSEL Tel. (32-2) 234 67 50 Fax (32-2) 234 67 51 E-mail: <a href="mailto:datashop@planistat.be">datashop@planistat.be</a> URL: <a href="http://www.datashop.org/">http://www.datashop.org/</a>	<b>DANMARKS STATISTIK</b> <b>Bibliotek og Information</b> <b>Eurostat Data Shop</b> Sejrogade 11 DK-2100 KØBENHAVN Ø Tlf. (45) 39 17 30 30 Fax (45) 39 17 30 03 E-mail: <a href="mailto:bib@dst.dk">bib@dst.dk</a> Internet: <a href="http://www.dst.dk/bibliotek">http://www.dst.dk/bibliotek</a>	<b>STATISTISCHES BUNDESAMT</b> <b>Eurostat Data Shop Berlin</b> Otto-Braun-Straße 70-72 (Eingang: Karl-Marx-Allee) D-10178 BERLIN Tel. (49) 1888 644 94 27/28 Fax (49) 1888-644 94 30 E-Mail: <a href="mailto:datashop@destatis.de">datashop@destatis.de</a> URL: <a href="http://www.eu-datashop.de/">http://www.eu-datashop.de/</a>	<b>INE Eurostat Data Shop</b> Paseo de la Castellana, 183 Oficina 011 Entrada por Estébanez Calderón E-28046 MADRID Tel. (34) 91 583 91 67 Fax (34) 91 579 71 20 E-mail: <a href="mailto:datashop.eurostat@ine.es">datashop.eurostat@ine.es</a> URL: <a href="http://www.datashop.org/">http://www.datashop.org/</a>	<b>INSEE Info Service</b> <b>Eurostat Data Shop</b> 195, rue de Bercy Tour Gamma A F-75582 PARIS CEDEX 12 Tél. (33) 1 53 17 88 44 Fax (33) 1 53 17 88 22 E-mail: <a href="mailto:datashop@insee.fr">datashop@insee.fr</a>	<b>ISTAT</b> <b>Centro di Informazione Statistica</b> <b>Sede di Roma, Eurostat Data Shop</b> Via Cesare Balbo, 11a I-00184 ROMA Tel. (39) 06 46 73 31 02/06 Fax (39) 06 46 73 31 01/07 E-mail: <a href="mailto:dipdiff@istat.it">dipdiff@istat.it</a>
ITALIA – Milano	LUXEMBOURG	NEDERLAND	NORGE	PORTUGAL	SCHWEIZ/SUISSE/SVIZZERA
<b>ISTAT</b> <b>Ufficio Regionale per la Lombardia</b> <b>Eurostat Data Shop</b> Via Fieno 3 I-20123 MILANO Tel. (39) 02 80 61 32 460 Fax (39) 02 80 61 32 304 E-mail: <a href="mailto:mileuro@tin.it">mileuro@tin.it</a>	<b>Eurostat Data Shop Luxembourg</b> BP 453 L-2014 LUXEMBOURG 4, rue Alphonse Weicker L-2721 LUXEMBOURG Tél. (352) 43 35-2251 Fax (352) 43 35-22221 E-mail: <a href="mailto:dslux@eurostat.datashop.lu">dslux@eurostat.datashop.lu</a> URL: <a href="http://www.datashop.org/">http://www.datashop.org/</a>	<b>STATISTICS NETHERLANDS</b> <b>Eurostat Data Shop-Voorburg</b> Postbus 4000 2270 JM VOORBURG Nederland Tel. (31-70) 337 49 00 Fax (31-70) 337 59 84 E-mail: <a href="mailto:datashop@cbs.nl">datashop@cbs.nl</a>	<b>Statistics Norway</b> <b>Library and Information Centre</b> <b>Eurostat Data Shop</b> Kongens gate 6 Boks 8131 Dep. N-0033 OSLO Tel. (47) 21 09 46 42/43 Fax (47) 21 09 45 04 E-mail: <a href="mailto:Datashop@ssb.no">Datashop@ssb.no</a>	<b>Eurostat Data Shop Lisboa</b> <b>INE/Serviço de Difusão</b> Av. António José de Almeida, 2 P-1000-043 LISBOA Tel. (351) 21 842 61 00 Fax (351) 21 842 63 64 E-mail: <a href="mailto:data.shop@ine.pt">data.shop@ine.pt</a>	<b>Statistisches Amt des Kantons</b> <b>Zürich, Eurostat Data Shop</b> Bleicherweg 5 CH-8090 Zürich Tel. (41-1) 225 12 12 Fax (41-1) 225 12 99 E-mail: <a href="mailto:datashop@statistik.zh.ch">datashop@statistik.zh.ch</a> Internet: <a href="http://www.statistik.zh.ch">http://www.statistik.zh.ch</a>
SUOMI/FINLAND	SVERIGE	UNITED KINGDOM	UNITED STATES OF AMERICA		
<b>STATISTICS FINLAND</b> <b>Eurostat Data Shop Helsinki</b> <b>Tilastokirjasto</b> PL 2B FIN-00022 Tilastokeskus Työpajakatu 13 B, 2/Kerros, Helsinki P. (358-9) 17 34 22 21 F. (358-9) 17 34 22 79 Sähköposti: <a href="mailto:datashop@stat.fi">datashop@stat.fi</a> URL: <a href="http://www.tilastokeskus.fi/tk/ikk/datashop/">http://www.tilastokeskus.fi/tk/ikk/datashop/</a>	<b>STATISTICS SWEDEN</b> <b>Information service</b> <b>Eurostat Data Shop</b> Karlavägen 100 - Box 24 300 S-104 51 STOCKHOLM Tfn (46-8) 50 69 48 01 Fax (46-8) 50 69 48 99 E-post: <a href="mailto:infoservice@scb.se">infoservice@scb.se</a> Internet: <a href="http://www.scb.se/info/datashop/pleudatashop.asp">http://www.scb.se/info/datashop/pleudatashop.asp</a>	<b>Eurostat Data Shop</b> <b>Office for National Statistics</b> Room 1.015 Cardiff Road Newport South Wales NP10 8XG United Kingdom Tel. (44-1633) 81 33 69 Fax (44-1633) 81 33 33 E-mail: <a href="mailto:eurostat.datashop@ons.gov.uk">eurostat.datashop@ons.gov.uk</a>	<b>HAVER ANALYTICS</b> <b>Eurostat Data Shop</b> 60 East 42nd Street Suite 3310 NEW YORK, NY 10165 USA Tel. (1-212) 986 93 00 Fax (1-212) 986 69 81 E-mail: <a href="mailto:eurodata@haver.com">eurodata@haver.com</a>		

Media Support Eurostat (for professional journalists only):

Bech Building Office A3/48 • L-2920 Luxembourg • Tel. (352) 4301 33408 • Fax (352) 4301 32649 • e-mail: [eurostat-mediasupport@cec.eu.int](mailto:eurostat-mediasupport@cec.eu.int)

## For information on methodology

Hans Strelow, Eurostat/C2, L-2920 Luxembourg, Tel. (352) 4301-34580, Fax (352) 4301-32289, E-mail: [hans.strelow@cec.eu.int](mailto:hans.strelow@cec.eu.int)

ORIGINAL: English

Please visit our web site at [www.europa.eu.int/comm/eurostat/](http://www.europa.eu.int/comm/eurostat/) for further information!

A list of worldwide sales outlets is available at the **Office for Official Publications of the European Communities**.

2 rue Mercier – L-2985 Luxembourg  
Tel. (352) 2929 42118 Fax (352) 2929 42709  
Internet Address <http://eur-op.eu.int/fr/general/s-ad.htm>  
e-mail: [info-info-opoce@cec.eu.int](mailto:info-info-opoce@cec.eu.int)

BELGIQUE/BELGIË – DANMARK – DEUTSCHLAND – GREECE/ELLADA – ESPAÑA – FRANCE – IRELAND – ITALIA – LUXEMBOURG – NEDERLAND – ÖSTERREICH  
PORTUGAL – SUOMI/FINLAND – SVERIGE – UNITED KINGDOM – ISLAND – NORGE – SCHWEIZ/SUISSE/SVIZZERA – BALGARUA – ČESKÁ REPUBLIKA – CYPRUS  
EESTI – HRVATSKA – MAGYARORSZÁG – MALTA – POLSKA – ROMÂNIA – RUSSIA – SLOVAKIA – SLOVENIA – TÜRKIYE – AUSTRALIA – CANADA – EGYPT – INDIA  
ISRAËL – JAPAN – MALAYSIA – PHILIPPINES – SOUTH KOREA – THAILAND – UNITED STATES OF AMERICA

## Order form

I would like to subscribe to Statistics in focus (from 1.1.2002 to 31.12.2002):

(for the Data Shop and sales office addresses see above)

**Formula 1:** All 9 themes (approximately 180 issues)

Paper: EUR 360

Language required:  DE  EN  FR

**Formula 2:** One or more of the following nine themes:

Theme 1 'General statistics'

Theme 6 'External trade'

Theme 7 'Transport'

Theme 9 'Science and technology'

Paper: EUR 42

Theme 2 'Economy and finance'

Theme 3 'Population and social conditions'

Theme 4 'Industry, trade and services'

Theme 5 'Agriculture and fisheries'

Theme 8 'Environment and energy'

Paper: EUR 84

Language required:  DE  EN  FR

Statistics in focus can be downloaded (pdf file) free of charge from the Eurostat web site. You only need to register. For other solutions, contact your Data Shop.

Please send me a free copy of 'Eurostat mini-guide' (catalogue containing a selection of Eurostat products and services)

Language required:  DE  EN  FR

I would like a free subscription to 'Statistical References', the information letter on Eurostat products and services

Language required:  DE  EN  FR

Mr  Mrs  Ms

(Please use block capitals)

Surname: \_\_\_\_\_ Forename: \_\_\_\_\_

Company: \_\_\_\_\_ Department: \_\_\_\_\_

Function: \_\_\_\_\_

Address: \_\_\_\_\_

Post code: \_\_\_\_\_ Town: \_\_\_\_\_

Country: \_\_\_\_\_

Tel.: \_\_\_\_\_ Fax: \_\_\_\_\_

E-mail: \_\_\_\_\_

**Payment on receipt of invoice, preferably by:**

Bank transfer

Visa  Eurocard

Card No: \_\_\_\_\_ Expires on: \_\_\_\_/\_\_\_\_

**Please confirm your intra-Community VAT number:**

**If no number is entered, VAT will be automatically applied. Subsequent reimbursement will not be possible.**